

REMARKS:

Claims 1-3 are currently pending in the application. Claims 1 and 2 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-3 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Farber in view of Kataoka.

Rejections under 35 U.S.C. § 112:

Claims 1 and 2 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner has noted several typographical errors in Claims 1 and 2. Claims 1 and 2 are hereby amended to correct the typographical errors noted by the Examiner. The Applicant submits that the corrections to the typographical errors are merely clerical in nature, do not affect the scope of the claims, are not made for reasons of patentability.

Rejections under 35 U.S.C. § 103(a):

Claims 1-3 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Farber et al. in view of Kataoka et al..

The Examiner states that Faber et al. disclose the invention substantially as claimed. The Examiner concedes that Faber et al. do not disclose first, second, third, and fourth gas directing means. The Examiner states that Kataoka et al. teach the use of first, second, third and fourth gas directing means (37a and 35, Fig. 4) for the purpose of directing heated gases upon the upper and lower surfaces of the object to be heated so as to maximize the heat transfer efficiency. The Examiner states that it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the cooking chamber of Farber et al. with first, second, third, and fourth gas directing means such as taught by Kataoka et al. in order to direct the heated gases upon the upper and lower surface of the food product to be heated so as to maximize the heat

transfer efficiency.

Farber et al. disclose a method of directing heated air flow wherein heated air in the upper portion of a cooking chamber moves downwardly in a cyclonic turbulent pattern, then meets at a vortex in the center bottom portion of the chamber, and then is moved upwardly while maintaining its cyclonic form. On the other hand, in the claimed invention, hot gas is directed at the food product within the cooking chamber from opposed sides of the oven cooking chamber, upon the top surface and also upon the bottom surface of the food product wherein the hot gas from a first upper side is directed toward the top surface of a food product and gas from a second upper opposed side is also directed toward the top surface of the food product in a manner wherein the hot gas from the first side collides and conflicts with the gas from the second side causing turbulence at the top surface of the food product; and hot gas from a third lower side is directed toward the bottom surface of a food product and gas from a fourth lower opposed side is also directed toward the bottom surface of the food product in a manner wherein the hot gas from the third side collides and conflicts with the gas from the fourth side upon the lower surface of the food product, causing turbulence at the bottom surface of the food product. The claimed invention produces no air flow pattern wherein heated air in the upper portion of a cooking chamber moves downwardly in a cyclonic turbulent pattern, no vortex wherein said downwardly moving cyclonic air flow meets in the center bottom portion of the chamber, and no air flow that moves upwardly while maintaining its cyclonic form.

Air flow in the Faber et al. device is directed in a cyclonic turbulent pattern downwardly into the cooking chamber, and is then moved upwardly while maintaining its cyclonic form. On the other hand, the gas flow in the claimed invention turbulently mixes both upon the top surface and upon the bottom surface of the food product by the conflicting and colliding gas flows from the sides of the oven cavity. In the claimed invention, there exists no cyclonic turbulent pattern directed downwardly into the cooking chamber and no air flow that is then moved upwardly while maintaining its cyclonic form. The upwardly directed gas flow of the claimed invention is produced by

the upwardly directed gas flows from the left and right side of the food product, said gas flows originating from **below** the food product and not from the upper portion of the cooking chamber. Thus, Farber et al. teach away from the claimed invention.

Faber et al. diagrammatically illustrate their cyclonic air flow pattern by means of arrows in FIG. 2: one set of arrows provided for each of the vertical walls of the cooking chamber. Faber et al. in FIG. 2 do not depict “numerous eddy currents”. Faber et al. state that “arrows which would be indicative of numerous eddy currents have not been illustrated...” Eddy currents are not defined by Faber et al. within the patent. Webster defines an eddy current as “a current of air, water, etc. moving against the main current and with a circular motion; little whirlpool or whirlwind”; “a contrary movement or trend, limited in importance or effect.” The eddy currents produce the turbulence that Faber et al. describe. The turbulence of the Faber et al. device is therefore limited in importance and/or effect. In the claimed invention, the turbulence produced by the conflicting and colliding gas flows is **highly turbulent** gas flow that produces rapid cooking of the food product. The gas flows of the current invention are not **by-products**, and are not limited in importance. The turbulence produced by the conflicting and colliding gas flows of the present invention is central to the invention.

Faber et al. expressly teach a cyclonic turbulent air flow pattern that is preferred over other air flow patterns, because said other air flow patterns tend to create a concentrated blast of air, hot spots, as well as burning and deforming of delicate baked goods. In contrast, the claimed invention utilizes directed gas flow without hot spots, or burning and deforming of delicate baked goods. The claimed invention may utilize either high velocity or low velocity gas flow, said velocity variations described within the specification of the current invention. For this reason, the Farber et al. teach away from the claimed invention.

The Faber et al. device has a central vertical vortex from the bottom of the cooking chamber upwardly toward a filter. The food product is placed within this cyclonic air flow, within the central vertical vortex. The claimed invention utilizes no

airflow with a central vertical vortex, but utilizes conflicting and colliding gas flow upon the food product surface, and upon both upper and lower sides of said food product.

The Faber et al. device discloses a grid member that is centrally located below and parallel to the plane of the heater means and impeller. One purpose of the grid member is that it allows the passage of radiation from the heater means into the cooking chamber in order to assist the controlled browning of foods. Cooking within the Farber et al. device requires the assistance of radiation from the heater means directly to the food product through the grid member. The Farber et al. device is therefore inefficient in that additional direct radiation from the heater means is required **in addition to** the air flow in order to cook the food product. The radiation provided by the heaters therefore assists the airflow of the Farber et al. device for surface browning and surface cooking of the food product. In the claimed invention, the conflicting and colliding gas flow patterns upon the upper and lower surface of the food product produces the desired browning and desired surface cooking, and no assistance from the heater means by means of radiation is necessary in order to effect desired controlled browning and surface cooking of the food product.

The Kataoka et al. device relates to an exhaust oven for cathode ray tubes and is directed towards decreasing the temperature difference between the funnel portion and the panel portion of the cathode ray tube to the utmost, when the tube is heated up or cooled down. The Kataoka et al. invention therefore is directed to producing an iso-thermal environment wherein temperature differences between the top portion of the cathode ray tube and the funnel portion (lower portion) is "minimized to the utmost". This is accomplished by a circulating atmosphere supplied through discharge ports toward the funnel portion of the cathode ray tube wherein the circulating atmosphere is directed toward the cathode ray tube in a manner wherein the temperature difference between both portions (panel portion and funnel portion) is lowered to below 10 degrees C. In the claimed invention, no iso-thermal environment is created and none is desirable in order to maintain lower than a 10 degree C temperature differential between the top portion of the food product and the lower portion of the food product.

The Kataoka et al. device relates to an efficient method of evacuating cathode ray tubes with reduced breakage. The claimed invention relates to speed cook of food products. Although the Kataoka et al. device and the claimed invention are both "ovens," the Kataoka et al. device is not in the same field of endeavor as the claimed invention, and does not address the same problem as the claimed invention.

The upwardly directed discharge ports of the Kataoka et al. device discharges atmosphere **obliquely** upon the funnel (lower) portion of a cathode ray tube. The atmosphere from the left side of the oven is directed upon the left portion of the funnel portion of the cathode ray tube and the atmosphere from the right side of the oven is directed upon the right portion of the funnel of the cathode ray tube. The atmospheres from the left and right sides of the Kataoka et al. device do not conflict and collide and turbulently mix upon the surface of the object to be heated. In the claimed invention, gas flow from the left side of the speed cooking oven conflicts and collides with gas flow from the right side of the speed cooking oven **upon the surface of the food product**. The collision causes turbulent mixing of the gas flow of the claimed invention by utilizing the food product as the mixing surface for the gas flow.

Applicant respectfully disagrees that "Kataoka teaches the use of first, second, third, and fourth gas directing means (37a and 35, Fig. 4) for the purpose of directing heated gases upon the upper and lower surfaces of the object to be heated **so as to maximize the heat transfer efficiency**." (Emphasis added.) The Kataoka et al. device teaches isothermal atmospheric conditions in order to reduce thermal stress upon the surface of the cathode ray tube that is to be evacuated. In the claimed invention, the turbulent collision of gas flow upon the surface of the food product maximizes heat transfer efficiency, thereby decreasing cooking time. Nowhere in the Farber et al. or Kataoka et al. references is taught maximization of heat transfer efficiency.

The Kataoka et al. device discloses a heating zone, a slow cooling zone, and a final cooling zone. The claimed invention teaches a singular cooking cavity for heating and cooking of food product.

The Kataoka et al. device is not in applicant's field of endeavor. The Kataoka et al. device is directed toward creating an isothermal atmosphere within an oven in order to reduce thermal stress upon cathode ray tubes during evacuation of said tube. The present invention is directed towards speed cooking of food products. Even if applicant's invention is considered to be within the same field of endeavor of the Kataoka et al. device, then the Kataoka et al. reference must be reasonably pertinent to the particular problem with which the present invention is concerned. As described above, there is no pertinence between applicant's invention for speed cooking of food products and Kataoka et al.'s device for creating an atmosphere within which cathode ray tubes can be evacuated with less thermal stress, and thereby less breakage.

The combination of Farber et al. and Kataoka et al. produces an inoperable device. The Farber et al. device produces heated air in the upper portion of a cooking chamber that moves downwardly in a cyclonic turbulent pattern, then meets at a vortex in the center bottom of the cooking chamber, and is then moved upwardly while maintaining its cyclonic form. The Kataoka et al. device produces air flow that is directed downwardly upon the upper surface of the object to be heated while also directing air flow upwardly upon the lower surface of the object to be heated. Combining the Farber et al. and Kataoka et al. inventions destroys any cyclonic air flow pattern of the Farber et al. device and destroys the beneficial isothermal environment of the Kataoka et al. device. No suggestion exists within either cited art that would suggest such combination. The combination of Farber et al. and Kataoka et al. produces an inoperable device for either intended purpose, either Kataoka et al. or Farber et al. The current invention directs gas flow upon the top surface of the food product wherein the gas flow from the right side of the oven conflicts and collides with the gas flow from the left side of the oven upon the surface of the food product. The same effect is created below the food product from gas that is directed upwardly upon the lower surface of the food product.

The Faber et al. device produces a cyclonic air flow pattern that moves past the food product as the air flow is directed downwardly and also moves past the food

product as gas is directed upwardly (FIG. 2) wherein the food product sits in the middle of said cyclonic air flow pattern. In the Kataoka et al. device, air flow interacts with the top portion of the cathode ray tube and interacts with the funnel portion of the cathode ray tube and is directed at the cathode ray tube in a manner that creates as close to an isothermal environment as possible around the cathode ray tube in order to prevent breakage. In the current invention, gas flow from the left side of the oven interacts with gas flow from the right side of the oven, both on top of the food product and on the lower surface of the food product. The gas flows are therefore interacting with each other and the food product surface merely provides a surface upon which this highly turbulent interaction of the left and right gas flows can occur.

The Farber et al. device teaches a predictable cyclonic flow pattern with a central vortex. The present invention teaches highly turbulent gas flow interaction, conflicting and colliding gas flows upon the surface of the food product in order to maximize heat transfer efficiency. The Farber et al. device does not teach maximization of heat transfer and teaches away from the claimed invention.

The Kataoka et al. device teaches the distribution of gas flow upon the surface of a cathode ray tube in order to obtain a temperature differential of less than 10 degrees C from the top portion of the cathode ray tube to the funnel portion of said tube. The present invention teaches no such isothermal atmosphere distribution. The Kataoka et al. device teaches away from the present invention.

The combination of the Farber et al. device and the Kataoka et al. device produces an inoperable device for either intended purpose (either Farber et al. or Kataoka et al.) and the combination of Farber et al. and Kataoka et al. produces a device that teaches away from the present invention.

The Farber et al. reference (1974) is not directed toward speed cooking of a food product, but is rather directed toward an oven that reduces hot spots produced by blasts of air, states that it is an improvement over air curtain devices and is directed toward creating predetermined uniform temperature. Farber et al. therefore follow the

teachings of those with ordinary skill in the art during the time frame. As described in Applicant's specification, it has been believed that uniform air was needed for cooking of food products. Later devices employ the use of laminar air flow, a smooth air flow around the food product. Patents have been issued to inventors of these devices that utilize laminar air flows. The current invention teaches away from laminar air flow and cyclonic air flow that produces predetermined uniform temperatures. The current invention is directed to gas flow that conflicts and collides upon the surface of the food product thereby producing maximum heat transfer.

The Kataoka et al. reference (1988), directed to uniform heating of a cathode ray tube, depicts a method of directing air flow, said air flow striking the cathode ray tube from various directions. No suggestion within either reference (Farber et al. or Kataoka et al.) is made to combine the references.

The Legal Standard for Obviousness Rejections Under 35 U.S.C. § 103:

Basic Considerations That Apply To Obviousness Rejections:

(A). The claimed invention must be considered as a whole.

1. **What is Examined:** 35 U.S.C. § 103 mandates that the invention "as a whole" be considered in making an obviousness determination, and reads as follows:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Field of Endeavor.** In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the invention was concerned. *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir.

1992).

(B). The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;

1. The Obviousness Test: In *Graham v. John Deere Co.*, 383 U.S. 1,148 U.S.P.Q. 459 (1966), the Supreme Court set forth the basic test for determining if an invention is obvious, stating at 383 U.S. 17-18:

[T]he scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or non-obviousness of the subject matter is determined.

2. Desirability of Making the Combination. There are three possible sources for a motivation to combine references: the nature of the problem to be solved; the teachings of the prior art; and the knowledge of persons of ordinary skill in the art. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998). When the motivation to combine the teachings of the references is not immediately apparent, it is the duty of the examiner to explain why the combination of the teachings is proper. *Ex parte Skinner*, 2USPQ2d 1788 (Bd. Pat. App. & Inter. 1986).

(C). The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention.

1. Time Frame of the Analysis: 35 U.S.C. § 103 mandates that the analysis be performed "at the time the invention was made."

(D). Reasonable expectation of success is the standard with which obviousness is determined.

1. Prior art can be modified or combined to reject claims as *prima facie*

obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Some degree of predictability of success is required and evidence showing there was no reasonable expectation of success may support a conclusion of nonobviousness. *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976).

(E). Establishing a *Prima Facie* Case of Obviousness: The USPTO bears the burden of establishing a *prima facie* case of obviousness, as is adequately summarized in *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992) which reads in relevant part, at 972 F.2d 1783, 1784:

In proceedings before the Patent and Trademark office, the Examiner bears the burden of establishing a *prima facie* case of obviousness based upon the prior art [The Examiner] can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. The patent applicant may then attack the Examiner's *prima facie* determination as improperly made out, or the applicant may present objective evidence tending to support a conclusion of nonobviousness.

What is required to meet this burden and establish a *prima facie* case of "obviousness" is quite particular, as explained in *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988), at 837 F.2d at 1598, 1599, 1600, with emphasis supplied:

The PTO has the burden under section 103 to establish a *prima facie* case of obviousness It can satisfy this burden only by showing some **objective** teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teaching of the references.

5. The Requirement of a Written Explanation: 35 U.S.C. § 132 provides the standards for a written explanation of a rejection, stating in relevant part:

Whenever, on examination, any claim for a patent is rejected, or any objection or requirement made, the Commissioner shall notify the applicant thereof, stating the reasons for such rejection, or objection or requirement, together with such information and references as may be useful in judging the propriety of continuing the prosecution of his application;

6. The Standard of Review on Appeal: It is well established that an obviousness determination is a question of law which is freely reviewable on appeal; in other words, the obviousness determination made by the USPTO is reviewed by the appeal court *de novo*, while the factual findings underlying the obviousness determination are reviewed for "clear error". See *In re Woodruff*, 919 F.2d 1575, 1577, 16 U.S.P.Q.2d 1934, 1935 (Fed. Cir. 1990).

7. Impermissible Activities: A substantial body of law exists which constrains the USPTO to proper considerations in performing an obviousness analysis. A few particular constraints are pertinent in the present appeal and will now be discussed.

First, obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion that the combination be made. See *In re Stencel*, 828 F.2d 751, 4 U.S.P.Q.2d 1061 (Fed. Cir. 1987).

Second, the mere fact that the prior art could be modified as suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. See *In re Laskowski*, 871 F.2d 115, 10 USPQ2d 1397 (Fed. Cir. 1989).

Third, before the USPTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, these must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Fourth, there must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination, and that knowledge cannot come from the appellant's invention itself. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

Fifth, it is impermissible for the USPTO to simply engage in hindsight

reconstruction of the claimed invention, using the applicant's invention as a template and selecting elements from the references to fill the gaps. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

Sixth, references that teach away cannot serve to create a *prima facie* case of obviousness. If references taken in combination would produce a “seemingly inoperable device” such references teach away from the combination and thus cannot serve as predicates for a *prima facie* case of obviousness. *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir 1984).

Seventh, the mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. The Examiner may not rely upon hindsight to arrive at a determination of obviousness and it is impermissible to use the claimed invention as an instruction manual or “template” to piece together the teachings of the prior art so that the claimed invention is rendered obvious. The Federal Circuit has stated that “[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention.” *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992).

Eighth, an invention is not obvious where one prior art reference teaches away from the combination with a second prior art reference. *In re Rudko*, Civ. App. No. 98-1505 (Fed. Cir. May 14, 1999) (unpublished). If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Conclusion:

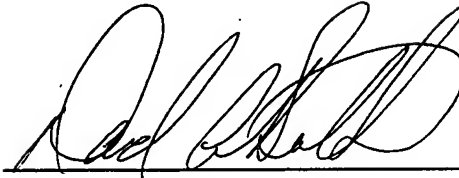
Claims 1-3 are hereby amended to comply with examiner's rejection under 35 USC § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The amendments to Claims 1-3 are merely clerical in nature, do not alter the scope of the claims, and are not made for

any reason of patentability. The Applicant submits that all of the Examiner's rejections have been traversed and overcome, and that Claims 1-3, as hereby amended, are now in condition for allowance. Therefore, the Applicant respectfully requests that Claims 1-3, as hereby amended, be allowed.

Filed herewith is a Request for Response Within the Third Month, an Information Disclosure Statement, and Form PTO-1449. Also enclosed is a check in the amount of \$1,160.00 to cover the \$980.00 fee for the Request and the \$180.00 fee for the Information Disclosure Statement.

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Date

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